WEST Search History

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DATE: Monday, August 08, 2005

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☐	L9	L8 and (select near8 response)	1
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☐	L7	(priority adj2 signal) near8 response	345
☐	L6	L5 and latency	3
☐	L5	L4 and (status adj2 signal)	3
☐	L4	20001219	14
☐	L3	(request adj2 queue) near8 (remove or removing) near8 response	29
☐	L2	request-and -forget	0
☐	L1	request-and forget	0

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L6: Entry 1 of 3 File: USPT May 28, 1996

DOCUMENT-IDENTIFIER: US 5521910 A
TITLE: Method for determining a best path between two nodes

Application Filing Date (1):
19941005

Brief Summary Text (14):
Text files and images can be sent over existing packet-based networks because the delivery of this information is not time critical. The new traffic (voice and video) is delivery time sensitive --variable or excessive latency will degrade the quality of service and can render this information worthless.

Detailed Description Text (91):
Each module 32 is microprocessor based, e.g., i960 sold by Intel Corporation. FIG. 5 illustrates a module embodying an SPFS switch 40 which is linked to the module's host processor 41 by a pair of port interface links 42 for transfer of data, and a pair of status/control links 43 for transfer of status and control signals. The control and status interface is viewed by the host CPU as a set of registers that control the configuration and switching policies of the SFPS, as well as allowing the host CPU access to diagnostic information and switching statistics.

Detailed Description Text (120):
The call processor 77 removes the ARP request from the queue and fills in the destination MAC address and sends an ARP response to the source end system. The source end system now has an updated ARP cache and can send packets directly to the destination end system. These packets get switched through each switch along the path as programmed by the SCS.

Detailed Description Text (189):
Another disadvantage of the TDM and Round-Robin arbiters is that the latency of transmission of, for example, a data packet, may be increased due to the wasted time segments. That is, although a data packet from a particular port may be waiting and ready for transmission across the backplane communication link, the data packet cannot be transmitted until the TDM arbiter allows the port access to the backplane communication link or the Round-Robin token is allocated to the port.

Detailed Description Text (190):
Therefore, an object of the present invention is to provide a method and apparatus for arbitrating access to a bandwidth-limited, shared resource in a manner that improves latency through a bandwidth-limited resource.

Detailed Description Text (220):
The present invention provides a system in which competing devices that require deterministic and regular service policies can be accommodated, as well as devices that can arbitrarily make use of a bandwidth-limited, shared resource. In addition, the present invention allows unused time segments to be allocated to devices that can make use of them, thus improving the latency of data transmission to or through the bandwidth-limited, shared resource, if the competing devices are programmed to

participate in the second and third levels of arbitration. A device can be selected to participate in the second level of arbitration by simply including it in the list of devices that may receive the allocation token. Deleting a device from this list will prevent it from participating in this level of arbitration.

Detailed Description Text (222):
One way of achieving oversubscription is to assign time segments in the first level of arbitration to only some of the competing devices, such as those requiring a regular or deterministic type of service policy. The remaining competing devices are then programmed to compete in the second and third levels of arbitration to use unallocated time segments resulting after the first level of arbitration. Another way to use the present invention to achieve oversubscription is to assign time segments in the first level of arbitration to all of the competing devices to guarantee that each device has at least one opportunity to use the bandwidth-limited, shared resource. The lower levels of arbitration are then used to allocate unused time segments resulting after the first level of arbitration, thus improving the latency through the bandwidth-limited, shared resource.

Detailed Description Text (228):
In this particular application, the switch 40 provides 640 Mbits of bandwidth. Each Ethernet port gets 25.6 Mbits of bandwidth allocated to it, which is more than enough for their needs. The total Ethernet bandwidth is approximately 120 Mbits/sec and the backplane has been allocated 307 Mbits/sec and can therefore pass all the traffic the Ethernets could generate. The host or CPU has only been allocated one slice out of 25 (25.6 Mbits/sec) which if not enough can be supplemented by enabling the round robin and lowest level arbitration cycles so the CPU can also use unclaimed time slices. If desired, the backplane and Ethernet ports can also have the second and third level arbitrations enabled. While there is no bandwidth requirement in this example that would warrant doing so, it may improve module latencies by allowing these ports time slices earlier than they would normally receive them.

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